MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
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Abstract Proforma

FBP / IOMP / MAJOR PROJECT

Year & Branch: III C.S.E	**Section: B**	**Batch No.: 2**
Academic Year: 2024-2025		**Regulation:** MLRS-R20
Student Registration Details	Name	Roll Number
	1. YERUVA AMULYA REDDY	217Y1A0572
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Name of the Guide & Designation	Dr. T.S. SRINIVAS	
Area (Domain) of the Project	Cryptography	
Title of the Project	MAGPIE: A DEMONSTRATION OF SYMMETRIC ENCRYPTION	
Tools Required	Python	

Abstract

- **Background/Introduction:** In an era where data security is paramount, encryption techniques are crucial for safeguarding sensitive information. The project "Magpie" addresses this need by demonstrating encryption through a Python-based application. This project is important as it provides both a command-line interface (CLI) and a graphical user interface (GUI), making cryptographic principles accessible and interactive for users.
- **Objectives:** The primary objective of the Magpie project is to implement and demonstrate the fundamental principles of cryptography and information security. It aims to offer a practical, user-friendly solution for symmetric encryption and decryption of text messages, utilizing shift cipher for encryption and SHA-256 for hashing.
- **Methodology:** Magpie employs Python as the core programming language, integrating the cryptography library for implementing symmetric encryption using the shift cipher and hashing through SHA-256. The project is designed to be user-interactive, offering both a CLI and GUI. The methodology involves key generation, encryption, decryption, and error handling to ensure secure and efficient processing of text messages.
- **Expected Results/Outcomes**: The expected outcome is a fully functional Python application that can encrypt and decrypt text messages securely. The project is anticipated to effectively demonstrate the concepts of symmetric encryption and hashing, providing users with a practical understanding of cryptographic principles. The dual interface (CLI and GUI) is expected to cater to both novice and experienced users.
- **Significance/Impact**: Magpie has the potential to significantly impact the educational domain by serving as a valuable learning tool for cryptography and information security. It simplifies complex cryptographic concepts, making them accessible to a broader audience. Additionally, the project underscores the importance of data security in digital communications, potentially influencing future developments in secure messaging applications.

Key Words: sha256-hash, tkinter-gui, symmetric-encryption.

Guide **Project Coordinator** **HOD**

Guidelines for a Strong Title:

1. **Be Specific:** The title should clearly indicate the focus of the project. Avoid vague or overly broad terms.
2. **Include Key Elements:** Mention the main components or technology used, the problem addressed, or the expected outcome.
3. **Be Concise:** Aim for a title that is succinct yet descriptive. Typically, a title should be between 10-15 words.
4. **Use Keywords:** Include important keywords that reflect the core of your project. This helps in making the title more searchable and relevant.

Example Title Components:

1. **Technology or Approach:** Mention if your project involves specific technologies (e.g., IoT, AI, machine learning).
2. **Application Area:** Indicate the field or area where the project is applied (e.g., agriculture, healthcare, education).
3. **Purpose or Goal:** Highlight the main objective or problem being addressed (e.g., optimization, enhancement, reduction).

Example Titles:

1. **Developing an IoT-Based Smart Irrigation System for Efficient Water Usage in Agriculture**
2. **AI-Driven Healthcare Monitoring System for Early Disease Detection**
3. **A Machine Learning Approach to Predictive Maintenance in Manufacturing Industries**
4. **Renewable Energy Solutions for Sustainable Urban Development**
5. **Designing an Educational Platform for Personalized Learning Using Adaptive Algorithms**

Crafting a Title for the Provided Example:

If we consider the earlier example of the smart irrigation system, a suitable title could be:

"IoT-Based Smart Irrigation System for Optimized Water Usage in Sustainable Agriculture"

This title clearly mentions:

- The technology used (IoT-Based)
- The main focus (Smart Irrigation System)
- The goal (Optimized Water Usage)
- The application area (Sustainable Agriculture)

By following these guidelines, you can create a title that is informative, specific, and engaging for your project abstract.